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26. FISHES OF THE GENUS *COLISA* CUVIER FROM MANIPUR AND FIRST RECORD OF *COLISA LABIOSUS* (DAY) FROM INDIA

The genus *Colisa* Cuvier belongs to the Family Belontiidae and is distinguished from other genera in having the pelvic fins each reduced to a single ray and dorsal fin having 15-18 spines. Menon (1952) recorded *Colisa fasciatus* (Schneider) for the first time from Manipur and listed it in his list of species from the State. Menon (1954) recorded a female form of *C. chuna* (Hamilton-Buchanan) [now *C. sota* (Ham.-Buch.)] for the first time from Manipur. It is found abundantly in Loktak lake of the State. He also listed *C. fasciatus* in his list of species from Manipur. Day (1878) described *C. labiosus*, which was collected from Rangoon, Myanmar. Chaudhuri (1912), Hora (1921, 1936), Hora and Mukerji (1935), Menon (1952) and Menon (1954) reported the fishes of Manipur, but did not include *C. labiosus*. This paper gives diagnostic characters of the fishes of the genus *Colisa* from Manipur including that of the newly recorded *C. labiosus* (Day) from India.

Measurements and counts follow Jayaram (1999). The body proportions are expressed in percentages of standard length (SL) and head length (HL). The specimens of the three species, *C. fasciatus*, *C. sota* and *C. labiosus* are deposited in the Manipur University Museum of Fishes (MUMF).

Colisa labiosus (Day)

Trichogaster labiosus Day, 1878. Fishes of India. 374, pl. 79, fig. 4 (type-locality: Rangoon, Myanmar); Day, 1889. *Fauna Br. India, Fishes* 2: 372.

Material examined: MUMF L0019/18, 47.0-64.5 mm SL, 5.vi.2001-15.viii.2001, Mayang Imphal ponds and Iril river. I. Linthoingambi (IL)

Local name: Pheteen (Manipuri).

Diagnosis: Size small. The species can be distinguished from other species of *Colisa* in having very thick and papillated lips (Fig. 1b), and soft dorsal and anal fins produced. D. xv-xviii, 9-11; A. xv-xviii 15-18, C 15; P. iv 7-9; V. 1. Predorsal scales 8-9. Morphometric data of the specimens (Table 1) with comparison to that given by Day (1878) are given in Table 2.

Table 1: Morphometric data of *Colisa labiosus* (% of standard length except SL in mm)

| Characters | Range | Mean | S.D. |
|----------------------------|-----------|------|------|
| Standard length | 47.0-73.4 | - | - |
| Depth of body | 34.9-44.3 | 40.1 | 2.5 |
| Head length | 12.1-35.3 | 31.2 | 6.5 |
| Maximum head width | 17.4-20.5 | 20.1 | 0.9 |
| Head width (nares) | 11.3-15.0 | 13.0 | 1.1 |
| Head depth (occiput) | 25.0-30.1 | 27.7 | 2.0 |
| Head depth (eye) | 17.0-20.4 | 18.3 | 1.5 |
| Snout length | 7.4-11.2 | 8.8 | 1.1 |
| Eye diameter | 8.2-10.2 | 9.2 | 0.7 |
| Inter-orbital space | 14.2-16.7 | 15.4 | 0.8 |
| Gape width | 8.0-12.1 | 10.2 | 0.9 |
| Inter-narial space | 9.0-13.5 | 10.2 | 1.0 |
| Pre-dorsal length | 34.1-43.3 | 37.5 | 2.5 |
| Pre-pelvic length | 27.2-35.0 | 30.3 | 2.0 |
| Pre-anal length | 37.0-43.1 | 41.0 | 2.0 |
| Dorsal fin base length | 49.0-62.5 | 59.3 | 4.0 |
| Pectoral fin length | 29.3-34.4 | 32.0 | 1.3 |
| Ventral fin length | 81.5-97.4 | 91.0 | 6.2 |
| Anal fin length | 55.3-67.3 | 62.0 | 3.5 |
| Caudal fin length | 32.2-39.1 | 35.9 | 2.5 |
| Body width (dorsal origin) | 16.4-20.0 | 18.1 | 1.1 |
| Body width (anal origin) | 15.5-19.5 | 18.0 | 1.1 |

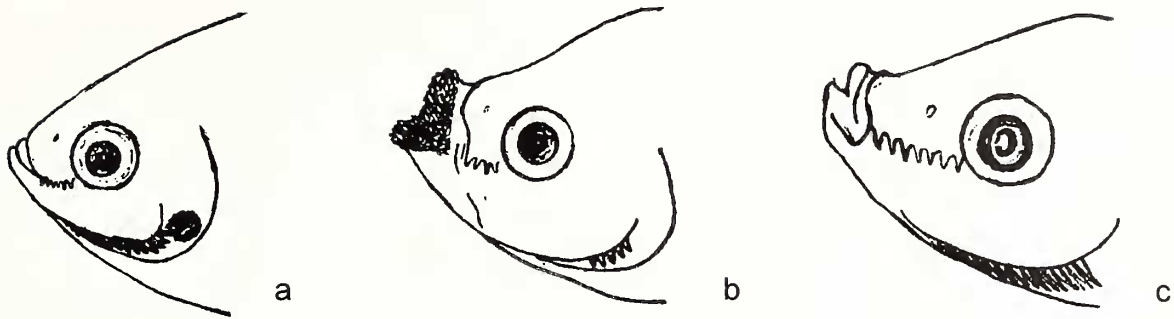


Fig. 1: Shapes of mouths in a. *Colisa fasciatus*, b. *Colisa labiosus*, c. *Colisa sota*

Colour: Greenish, lighter ventrally. Body has 8-10 oblique vertical dark bars on the sides, blue horizontal stripe on body. Fins dark, outer edge of anal fin yellowish-red.

Distribution: INDIA: Manipur: Iril river, ponds and ditches. South Myanmar.

Remarks: The body proportions of the present specimens almost fit into the descriptions of Day (1878). The fish measures 47.0-73.4 mm SL. Number of serrations on pre-orbital 6-11 and those on pre-opercle are short and few in number. Scales present on bases of dorsal, anal and caudal fins. Lengths of unpaired fins vary extensively in relation to head length: dorsal (144-204%), ventral (236.3-302%) and anal fin (158-206%). Iril river is a principal tributary of the Imphal river which, in turn, joins the Chindwin in Myanmar. Thus, the distribution of the species in Iril river is quite natural. This paper extends the distribution of the species to India. The fish is quiet and very graceful compared to other species of *Colisa*.

***Colisa fasciatus* (Schneider)**

Trichogaster fasciatus Schneider, 1801. Syst. Ichth.: 164, pl. 36 (type-locality: Tranquebar); Day, 1878. Fishes of India: 374, pl. 78, fig 6; Day, 1889, *Fauna Br. India, Fishes*, 2: 372, fig. 123.

Material examined: MUMFL0001/18, 46.0-65.0 mm SL,

Table 2: Comparison of *Colisa labiosus* Cuvier with specimen from Manipur, India

| Characters | <i>Colisa labiosus</i> (present study) | | <i>Colisa labiosus</i> Day (1875-78) | |
|----------------------|--|----------------|--------------------------------------|----------------|
| | In total length | In head length | In total length | In head length |
| Length of head | 4.0 | - | 4.2 | - |
| Length of caudal fin | 3.8 | - | 3.2 | - |
| Height of body | 3.4 | - | 2.6-3.2 | - |
| Eye diameter | - | 3.8 | - | 3.5 |
| Inter-orbital space | - | 2.2 | - | 1.5 |

Mayang Imphal ponds and Iril river. 5.vi.2001. IL.

Local name: Ngabemma (Manipuri)

Diagnosis: D. xv-xvii, 9-14; A. xv-xvii, 14-19; C. 13; P.i-ii, 7 or 9; V.i. Predorsal scales 7-8. Body oval in shape and strongly compressed. Mouth small, slightly protrusible (Fig. 1a). There is a green spot on the distal part of the opercle. Serrations on preorbital range from 5-13, number varies from left to right. Dorsal and anal fins with a long base; the soft portion in some is rounded, in others more pointed. Anal fin ends at the origin of the caudal fin. Lateral line interrupted. Beyond the opercle it runs up to 15th scale with a gap of 2 non-perforated scales. Counting from mid-dorsal to the lateral line, the number of lateral transverse scales is 5. The second lateral line runs from 18th scale, lateral transverse scales 6. Scales present over dorsal, anal, and caudal fins.

Colour: Male with 11-13 dark bars descending obliquely downwards and backwards. Female with alternating light blue and golden yellow bands descending obliquely downwards and backwards. Anal fin with a red margin, dorsal and caudal fins spotted with orange.

Distribution: INDIA: West Bengal, Assam and Manipur. Bangladesh. Nepal. Pakistan. Upper Burma (now Myanmar).

Remarks: Morphometric data of *C. fasciatus* of the present study are given in Table 3. It inhabits rivers, lakes, ponds and ditches. It is calm and is a beautiful aquarium fish, abundant during rainy season. The size ranges from 46-65 mm SL. The number of serrations on pre-orbital ranges from 5-13, those on pre-opercle are long and many in number. Scales are present not only at the base of the anal fin, but their presence till the tip is noted. Scales present over dorsal and caudal fins as well. However, Day (1878) mentioned that scales are few on the vertical fins of Assam specimens, more on those from Kolkata or Ganjam. Talwar and Jhingran (1991) noted that the anal fin is scaly at the base only. Weber (1922) also noted presence of scales only at the base of vertical fins. The ventral fin length in percentage of head length varies extensively (235-315.5).

Table 3: Morphometric data of *Colisa fasciatus*
(% of standard length except SL in mm)

| Characters | Range | Mean | S.D. |
|----------------------------|------------|------|------|
| Standard length | 46.0-65.0 | - | - |
| Depth of body | 37.0-44.4 | 41.3 | 2.0 |
| Head length | 30.0-35.0 | 32.2 | 2.5 |
| Maximum head width | 19.0-21.4 | 20.0 | 0.9 |
| Head width (nares) | 10.5-14.0 | 12.2 | 1.1 |
| Head depth (occiput) | 25.0-29.1 | 27.3 | 1.3 |
| Head depth (eye) | 16.0-21.0 | 18.0 | 1.5 |
| Snout length | 8.0-10.2 | 9.0 | 0.8 |
| Eye diameter | 8.0-10.3 | 9.5 | 0.6 |
| Inter-orbital space | 14.2-16.4 | 15.3 | 0.8 |
| Gape width | 5.2-9.4 | 10.2 | 2.4 |
| Inter-narial space | 9.0-13.4 | 10.2 | 2.1 |
| Pre-dorsal length | 35.1-39.1 | 37.4 | 1.1 |
| Pre-pelvic length | 26.1-31.0 | 29.0 | 1.0 |
| Pre-anal length | 21.0-45.0 | 40.0 | 5.1 |
| Dorsal fin base length | 45.3-64.0 | 59.0 | 4.1 |
| Pectoral fin length | 30.0-34.0 | 31.0 | 2.2 |
| Ventral fin length | 80.0-106.1 | 89.0 | 10.0 |
| Anal fin length | 58.0-68.0 | 62.1 | 2.2 |
| Caudal fin length | 28.0-37.0 | 31.4 | 3.2 |
| Body width (dorsal origin) | 19.0-21.0 | 19.4 | 0.8 |
| Body width (anal origin) | 17.0-20.3 | 19.0 | 0.9 |

Table 4: Morphometric data *Colisa sota*
(% of standard length except SL in mm)

| Characters | Range | Mean | S.D. |
|----------------------------|-----------|------|------|
| Standard length | 21.4-24.3 | - | - |
| Depth of body | 36.0-40.0 | 38.0 | 1.4 |
| Head length | 33.0-35.0 | 34.0 | 0.01 |
| Maximum head width | 18.0-19.2 | 19.0 | 0.5 |
| Head width (nares) | 11.0-13.2 | 10.3 | 4.1 |
| Head depth (occiput) | 26.0-28.0 | 27.0 | 0.7 |
| Head depth (eye) | 18.0-22.1 | 20.0 | 1.4 |
| Snout length | 10.0-12.0 | 10.4 | 0.8 |
| Eye diameter | 11.2-13.3 | 12.1 | 0.7 |
| Inter-orbital space | 14.0-16.0 | 14.2 | 2.1 |
| Gape width | 6.6-7.5 | 7.1 | 0.3 |
| Inter-narial space | 9.0-10.5 | 8.1 | 4.0 |
| Pre-dorsal length | 41.6-42.5 | 42.2 | 0.4 |
| Pre-pelvic length | 31.0-35.0 | 33.3 | 1.4 |
| Pre-anal length | 40.5-43.4 | 42.0 | 1.1 |
| Dorsal fin base length | 57.5-63.0 | 61.0 | 2.0 |
| Pectoral fin length | 25.0-30.0 | 28.3 | 2.0 |
| Ventral fin length | 64.5-77.0 | 71.0 | 4.4 |
| Anal fin length | 61.0-64.0 | 62.5 | 1.1 |
| Caudal fin length | 28.1-33.0 | 30.1 | 2.0 |
| Body width (dorsal origin) | 19.0-20.0 | 19.3 | 0.3 |
| Body width (anal origin) | 18.2-19.3 | 19.0 | 0.4 |

***Colisa sota* (Hamilton-Buchanan)**

Trichopodus sota Hamilton-Buchanan, 1882. *Fish. Ganges*: 120, 373 (type locality: Ganges River). *Trichopodus chuna* (Hamilton-Buchanan) Day, 1876. *Fishes of India*: 373, pl. 78, fig. 3; Day, 1889. *Fauna Br. India, Fishes*, 2: 371.

Material examined: MUMF L0037/6, 21.4-24.3 mm SL, Canchipur. 5.x.2001, IL.

Local name: Tombemma, Pheteen (Manipuri)

Diagnosis: D. xvii-xviii, 6-9; A. xviii-xxii, 11-13, C. 13; P. i, 9; V. i Pre-dorsal scales 7-8. Size small, body oblong and compressed, mouth small, upturned and highly protrusible (Fig. 1c). Ventral fin reaches posterior extremity of anal fin. Caudal fin slightly emarginated. Scales large.

Colour: Dull greenish, lighter along abdomen. From the eye on the side towards lower half of the base of the caudal fin, a dark, sometimes black lateral band consisting of black dots and shining with golden gloss. Caudal fin with a black spot at its base.

Distribution: INDIA: Gangetic provinces, Assam and Manipur. Bangladesh.

Remarks: Morphometric data of *C. sota* in the present study are given in Table 4. It is small and is of less importance in fishery. Length ranges from 21.4-24.3 mm SL. Number of

serrations on pre-orbital 6-8 and those on pre-opercle are long and many in number.

KEY TO SPECIES

1. Body with many oblique bands from back to belly 2
- Body with a dark lateral band from eye to lower half of tail *C. sota*
2. Bands on body eight to ten. Lips thick, papillated *C. labiosus*
- Bands on body 11-13 or more. Lips thin, non-papillated *C. fasciatus*

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27. FIRST RECORD OF THE POLKA-DOT TRIGGERFISH
CANTHIDERMIS ROTUNDATUS (PROCÉ) (= *CANTHIDERMIS MACULATUS*)
(FAMILY BALISTIDAE) FROM MUMBAI

The monsoon season is a harbinger of unusual fishes, normally associated with coral reefs, to Mumbai. So far, the following have been recorded from Mumbai in this season: Moorish Idol *Zanclus cornutus* and Squirrel Fish *Holocentrus rubrum* (Chhappgar and Deshmukh 1964), Filamented Butterflyfish *Anisochaetodon (Linophora) auriga*, Lined Butterflyfish *Anisochaetodon (Oxychaetodon) lineolatus*, Raccoon Butterflyfish *Chaetodon (Chaetodontops) lunula*, Yellow-headed Butterflyfish *Chaetodon (Rhabdophorus) xanthocephalus* (Chhappgar and Jatar 1968); Scribbled Leatherjacket *Alutera scripta* and yellow-finned leatherjacket *Monacanthus monoceros* (Chhappgar 1978), Red-toothed Triggerfish *Odonus niger?* (Chhappgar and Ringangaonkar 1990) and pig-faced filefish *Paramonacanthus choirocephalus* (Chhappgar and Muley 1997).

In July 2002, two specimens of a fish were collected at Girgaum Chowpatty (south Mumbai) and brought alive to the Taraporevala Aquarium. One died within a few days, but the larger one is still surviving at the time of writing this note. It was about 10 cm when captured, but is growing fast. It has been identified as the Polka-dot (also known as round or rough) Triggerfish *Canthidermis rotundatus* (Procé).

The body of this fish (at least at this size) does not have the typical shape of a triggerfish with a huge triangular head almost one-third the length of the body. It is more akin to Cardinal Fish (*Apogou* spp.). But it has the typical "locking-trigger" of the first (spinous) dorsal fin, and the high, triangular soft dorsal and anal fins bending together in the same direction while swimming — a movement typical of triggerfishes.

Colouration: The body is coal-black with ivory-white rounded spots scattered all over it. Within a month of capture, the number and size of these spots have perceptibly increased. The black body colouration during the day fades to a very light brown at dusk and remains so at night, darkening again in the morning. The dorsal spine is black and held erect.

The colour after preservation has been described by de Beaufort and Briggs (1962) as "light brown with dark brown interrupted longitudinal stripes on head, body and tail,

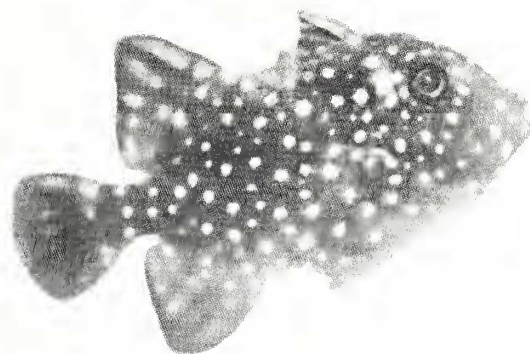


Fig. 1: Polka-dot Triggerfish, *Balistes maculatus*

dissolving into spots at bases of second dorsal, anal and caudal. Some parallel oblique stripes on cheeks." Munro (1955) also observed "undulating brown lines and fine blue spots on sides. Fins brownish. Soft dorsal with obscure blotches on middle of highest rays. Caudal dark brown" (in an 11 cm fish). Day (1878-88) gives the body colour as bluish-black. We have not observed any stripes on the live fish. It is said to grow to 55 cm. Colour illustrations of the fish have been given by Halstead (1967) in addition to the various authors mentioned in the references.

As it is not possible to make scale or fin-ray counts in the live specimen, these counts by various authors are given below.

Day: D. III/26-27, P. 15, A. 24-25, C. 12, L. I. 40-55, L. tr. 28.

Munro: D. III/25-26, A. 23-24, L. I. 42-57, L. tr. 30-54.

Barnard: D. III + 24-26, A. 24-25, L. tr. 28-30.

Smith: D. III/24-27, A. 24-26, L. tr. 30.

Beaufort & Briggs: D. III/2.23-24, A. I-2.21, P. I. 14, L. I. 42-43, L. tr. 29-34.

Jones & Kumaran: D₁ III, D₂ ii, 23-24, A. i, 21-22, P. i, 13-14, L. I. 42-44 + 6-7, L. tr. 29-32.

It is likely that the depth of the body increases as the fish grows, as seen from the illustrations given by the various authors. The depth is contained 2½ to 3 times in the total